PROBLEMS IN PROTO-INDO-EUROPEAN GRAMMAR: RESIDUES FROM PRE-INDO-EUROPEAN ACTIVE STRUCTURE

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1. RELATIONSHIP BETWEEN THE PERFECT TENSE AND THE MIDDLE VOICE

For some time scholars concerned with Indo-European grammar have examined problems that allowed no satisfactory solution. Among the most persistent of these are similarities in form and meaning between the perfect tense and the middle voice, categories that in the dialects belong to quite different sub-systems of the verbal paradigm. The amount of attention, extending over more than a century, permits listing only a few of the scholars and of the numerous publications. In the recent concern, Bader (1972), Cowgill (1975, 1979), Jasanoff (1978), Kuryłowicz (1964), Neu (1968), Schmalstieg (1977), Stang (1932), and Watkins (1969) have published important studies, with consideration of earlier scholarship.

The situation was further complicated by the discovery of Hittite, and identification that the *hi*-conjugation was related to the perfect; see Tischler (1982) for a recent treatment and survey of earlier studies. Widely accepted conclusions have been formulated by Adrados (1981:27–58), who himself has provided numerous contributions to the investigation (1972, 1975, 1988a).

Among conclusions on which scholars have reached some consensus is the view as stated by Adrados that "the middle voice and the perfect are derived from a common source" (1981:28). While he goes on to say that the "original, older form" has not been identified, he finds agreement that it had "stative meaning" (1981:29). Investigators have also concluded that "there are too many differences between the middle voice . . . on the one hand and the Indo-European perfect on the other, to assert any direct derivation of one from another" (1981:30).

The impasse has now been solved by the identification of pre-Indo-European as an active language (Gamkrelidze/Ivanov 1984:267–319; see also Perelmuter 1977, and Schmidt 1980:102–05. Palmaitis (1988:289) makes the excellent suggestion that the term 'fientive' be used for lan-

guages of this structure in order to avoid misunderstandings with the use of 'active' in contrast with 'passive'. (But since the term 'active' is used for the structural type in the other references here, I retain it.) Their typological proposal corroborates the statement made by Neu in his excellent monograph of 1968. After meticulous examination of the evidence in Hittite, Neu concludes on the basis of the securely established (bewährten) methods of historical linguistics that in early Germanic the two voices were the "Aktivum" and the "Perfektum" (1968:133). This situation is another example of the interrelationship of the traditional procedures in historical linguistics supported by the findings of typology, as Gamkrelidze has reiterated in a number of publications.

Among other characteristics, active languages have verb systems with contrasting active and stative sub-systems. By the solution the stative sub-system is the "original, older form" from which the middle and the perfect developed; the active sub-system is the "older form" of the -*mi* conjugation.

In support of the identification Gamkrelidze and Ivanov point out characteristics especially in the perfect tense that may be accounted for as reflexes of a stative sub-system. Chief among these in morphology are defective inflection, especially the absence of plural forms, as long noted in the Indo-European perfect (cf. especially Neu 1968); in stative languages the paradigm is limited, with personal forms primarily in the singular. Explanation by reference to active language structure for the limitation of characteristic endings in the perfect to the singular would by itself provide strong evidence in favor of positing active structure for pre-Indo-European. When the shift to accusative structure took place, the paradigm was completed by extension of endings from the active sub-system. The limitation of characteristic endings in the Anatolian *hi*-conjugation may be explained in the same way.

Moreover, assumption of the earlier stative permits us to account for the development of one sub-system to both the perfect and the middle. The perfect system in Vedic, and its parallel in early Greek, indicate completed state. The middle in turn indicates situations and activity with attention to the current state of the subject rather than to action affecting an object. The derivation of both perfect and middle is then accounted for semantically as well as formally, as we may note briefly.

Residues of the earlier active stage of Proto-Indo-European may be found in the classes of roots that inflect only or primarily in the middle, the so-called *media tantum* verbs. Delbrück identified five 'groups' of these (1897:419–25). Verbs of the first group indicate a state or condition, such as 'to sit comfortably, be in order, be patient'; the *media tantum* verbs that Neu considers 'original' belong to this group (1968:52). Verbs of the second group indicate a process involving the human body, such

as 'speak, smile, tell a lie.' The third group consists of verbs indicating ongoing motion, such as 'tremble, bow, bathe.' The fourth group consists of verbs indicating emotional states, such as 'rejoice, admire, bewail.' The fifth group, which Delbrück finds less homogeneous, consists of verbs indicating involvement by a subject, such as 'become visible, take possession of, enjoy.' Surveying the class meaning of active and of middle, Delbrück concludes that the active primarily has reference to a person who is taking action, while the middle indicates a process or state in which a person is involved.

Comparing a characterization of active versus inactive verbs in languages of active structure, we may note that Harris finds active verbs generally volitional, indicating actions under control of the agent represented by the nominal that is subject of the clause; among examples are 'run, chatter, play.' Inactive verbs, by contrast according to her, indicate state, e.g. 'exist, be sitting,' or change of state, e.g. 'become, wither,' or also dynamic non-volitional, e.g. 'close up (intr.), flow' (1990). The Indo-European groups as characterized by Delbrück, both *activa tantum* and *media tantum*, agree remarkably in meaning classes with the two groups of verbs in active languages.

Comparing briefly the class meaning of the perfect, as stated by Delbrück in keeping with the conclusions of others, we find a comparable formulation: the perfect indicates a state that has been attained. Like the aorist, it implies a completed action, but in addition the resulting situation (1897:177).

Accordingly both formal and semantic evidence supports the proposal that the middle and the perfect developed from an earlier stative class.

As a final point to be noted in reference to the hypothesis of earlier stative structure we may recall Adrados's reference (1981:33) to Hittite data compiled by Rosenkranz. Of 3,000 Hittite verb forms Rosenkranz determined that 2,453 followed the *mi*-inflection, only 547 the *hi*-inflection. The finding is in further keeping with characteristics of active languages.

Adrados concluded in his review of the situation that an explanation "requires a new approach" (1981:34). That approach has now been provided. By positing the earlier stage as active, Gamkrelidze/Ivanov have prepared the way for reexamination of problems in Indo-European grammar. The reexamination may be carried on most expeditiously by noting the characteristics of active structure, as determined most recently by Klimov in theoretical works of fundamental importance (1977, 1983; see also Palmaitis 1988:282–83). After sketching characteristics of active languages we note below insights that may be derived from them for explaining long-studied problems in Proto-Indo-European and the early dialects.

2. CHARACTERISTICS OF ACTIVE LANGUAGES

Active languages in contrast with accusative/ergative languages display relationships in the sentence through semantic sets rather than through grammatical categories. They include three classes: verbs, nouns and particles. Verbs and nouns are sub-classified for animate or active sets and for inanimate or stative sets. For example, a verb meaning 'place' and a noun meaning 'man' belong to the active sets; a verb meaning 'shine' and a noun meaning 'stone' belong to the stative sets. For some concepts that may be viewed as active or stative, such as 'lie (down), sit (down), fire, water', lexical items may be found in both sets. Further, active languages may include a distinct set of impersonal verbs, especially verbs of perception, i.e. affective verbs.

Relationships in sentences are determined by alignment of items in comparable sets—animate nouns with active verbs, inanimates with statives—rather than by government. Accordingly, transitivity is not a primary characteristic of grammatical classes; as Klimov puts it, "the subjective or objective intention of the verb is weakly expressed" (1977:314). Languages of active structure then generally lack a verb with the meaning 'have'.

There are also notable distinctions in morphology between active and accusative/ergative languages. Active languages lack inflection for the passive voice, maintaining instead semantic distinctions between verbs whose meaning refers to the subject as opposed to verbs with primary reference to an object, e.g. 'to lie down' versus 'to put down'. Moreover, verbal forms are characterized for aspect rather than tense. And as noted above verbal inflection of the stative sub-class is defective in contrast to that of the active.

Yet the chief inflectional marking is found on verbs rather than nouns. The nouns are characterized primarily by a suffix to indicate the agent with active verbs, and another indicating the patient of stative verbs as well as the target of active verbs. Other nominal inflection, including that for a genitive, may be absent; yet active languages tend to distinguish between alienable and inalienable possession. A nominal marker for possession also may be used to denote partitive relationships. In addition, a distinction may be made for the first person plural between inclusive and exclusive pronominal forms.

Assumption of active structure for pre-Indo-European permits us to account for residual constructions and forms, such as the hitherto unexplained similarities between the perfect tense and the middle inflection. In the past there was no possibility of accounting for such problems other than by hypotheses such as that of Kurylowicz, who stated that the genetic relationship "is borne out by the similarity of endings, and by

the old intransitive value of the perfect and its strong association with the present medio-passive, chiefly in Greek" (1964:68). Since that genetic relationship is now accounted for as reflex of the previous active structure, we proceed to review other problems in the early dialects for possible explanation as residues of the earlier structure.

3. SEMANTIC DOMINANCE OF THE VERBAL ROOT IN PROTO-INDO-EUROPEAN

By one of the more remarkable statements in Meillet's *Introduction* 'the word is autonomous and suffices of itself to indicate its sense and its role in discourse' (1937/1964:356). The statement implies among other things that verbs do not govern objects, that the accusative by itself indicates the target of the action and further roles, just as other cases fill their own specific roles; for a brief description of these see Meillet 1937:342–49. For example, in describing the role of the nominative Meillet says that it indicates the topic of the sentence, amplifying that analysis by adding 'subject', but in quotation marks (1937:342).

Meillet's analyses have not been challenged, even though they suggest a situation quite different from that of the early dialects. For these, statements like the following referring to Greek are given: "The accusative is a form of defining or qualifying the verb. . . . The accusative is the case of the direct object" (Smyth-Messing 1956:353–54). Comparing the two statements one can only conclude that a striking change in structure has taken place. In the structure that Smyth-Messing describe, transitivity—governing of nouns by verbs and prepositions—is central; the language is indisputedly of accusative structure. By contrast, Meillet's characterization of Proto-Indo-European can be understood if we posit for it active structure.

This conclusion is supported by his description of gender in Proto-Indo-European. Meillet posits two: animate and inanimate. Of these he states: 'to comprehend the value of the "animate" and "inanimate" genders, it is necessary to assume different views from those for modern languages. In Indo-European, everything that moves, everything that acts may be considered "animate". It may even happen that a given notion accords with two nouns, one "animate", the other "inanimate" (1937:339–40). As examples he gives those cited above, the two competing forms for fire and the two for water. For 'fire' "as an object" and in neuter gender he lists Greek *pûr*, Umbrian *pir*, Armenian *hur*, Old High German *fiur*; for 'fire' "as an active being" and in animate (masculine) gender he cites Sanskrit *agníḥ*, Old Slavic *ognĭ*, Latin *ignis*, adding that in Vedic *agníḥ* is "a divine personality" (340). Moreover, he amplifies the sets, stating that the names of active biological entities are animate,

such as those for foot, e.g. Greek *poús*, Latin *pēs*, and hand, while those of interior organs, are inanimate, such as that for liver. And the names of trees are animate while those of the fruits are neuter, e.g. Sanskrit *yákṛt*, Greek *êpar*, Latin *iecur*. Further, active forces are of animate gender, such as the "religious formula", Vedic *mántrah* and the wind.

Meillet's prescient analysis of gender in this way amplifies his description of characteristics which we now attribute to the earlier form of a language in active structure. It scarcely detracts from his insights that he ascribes the situation to semi-civilized mentality. We now account for it purely on a linguistic basis; morphologically as well as syntactically, Proto-Indo-European was active at an early stage.

While there has been a realignment in the dialects, we may expect to find residues of the earlier structure. Some of the more striking have to do with the lack of transitivity in given verbs. As de Boel has pointed out in a recent survey, Homeric *bállō* can mean either 'throw' or 'hit'. Among other examples in Greek is *ékhō*, which is used in the sense 'have' or also 'be', as in *eû ékhei* 'things are going well' and *lógos ékhei* 'the story goes . . .' Again, de Boel merely describes the situation.

When we examine roots in Proto-Indo-European, such as *bher-*, we find that they are broad in meaning. *bher-*, for example, means 'carry' with imperfective force and also 'bring' with perfective force. Although he is very cautious in his proposals for the parent language, Brugmann concludes that probably no specific aspect like imperfective or perfective was associated with given roots in the parent language (1916:716). Moreover, Hoffmann in his magesterial study of the injunctive assigns to it a 'memorative' meaning; the simplest surviving form from the earlier system is used simply to 'mention' a fact or a situation (1967:278–79). Inflection and modification of the root indicated various categories, such as person, aspect and voice.

Other roots as well maintain residues of the earlier situation. In his treatment of the functions of the accusative, Delbrück has an interesting, almost amusing, appendix entitled 'accusative with verbs of being?' (1893:370–72). He cites examples, with attention to previous discussions, of reflexes of the two roots *es-* 'be' and *bhew-* 'become'. In contrast with Curtius, who had accepted use of the accusative with reflexes of *es-* in Greek, Delbrück attempts to account for such constructions differently; but he admits that reflexes of *bhew-* probably are used with the accusative. For example, a clause that he finds difficult to dismiss occurs several times in the Taittirîya Samhitâ: *sá idám bhaviṣyati* 'he will achieve it, he will have good luck'. Although the uses are puzzling when one interprets them in the context of a language with accusative structure, they are readily acceptable for languages with active structure. By Meillet's analysis, the accusatives with *es-* and *bhew-* have their form because of their function rather than through government by the verb. From the

point of view of active structure, the endings indicate an inanimate entity.

Such examples demonstrate that verb roots were not inherently transitive or intransitive. Further, the alignment of any root was lexically determined. Delbrück compiled lists of roots that were active or not in the proto-language, or in his term 'pre-ethnic' (1897:416–25). Among the *activa tantum* he lists *gʷā-* 'go', as in Sanskrit *jígāti*, *wē-* 'blow' as in Sanskrit *vāti*, *ed-* 'eat', as in Sanskrit *átti*, *dō-* 'give' as in Sanskrit *dádāti*, *dek-* 'bite' as in Sanskrit *dáśati*. Among the *media tantum* he lists *key-* 'lie', as in Greek *keîmai*, *mey-* 'smile' as in Sanskrit *smáyate*, *bhegʷ-* 'fear', as in Greek *phébomai*, *wert-* 'turn' as in Sanskrit *vártate*, *wel-d-*, as in *éldomai* 'wish for'. As these examples illustrate, active roots may be used as transitives or intransitives, as may the inactives, though the reflexes of inactive roots are generally intransitive. The form of the root then did not indicate whether it governed an accompanying noun.

Specific verbal meanings, such as 'see, kill,' called for the inactive, later accusative, form in the predicate. Other meanings, such as 'be, turn pale', called for the active, later nominative, form in masculine or feminine gender (Schwyzer 1939–50: II, 72 fn. 1). These alignments result from semantic agreement, not from inherent transitivity or intransitivity of the verb.

The same situation prevailed for the simple conjugation classes of the early dialects. As Delbrück stated of the Sanskrit *bhávati* class, no consistent grammatical meaning can be found for verbs belonging to it; they can be durative or cursive, or even punctual (1897:83). Gotō in his careful study of the Sanskrit first class verbs has similarly found a variety of meanings; they can be transitive or intransitive—facientive, fientive, stative or factitive (1987). The same is true of the Germanic strong verbs, which reflect the situation of the proto-language most closely in form, and presumably also in function. We may conclude that the proto-language maintained many of the characteristics of active structure, as in having the root itself control the alignment with nouns. Since that alignment derived from lexical characteristics, especially animate or inanimate classification, the root was dominant in determining the structure of the clause.

3.1 Effects on the verb system of the shift to accusative structure in grammatical marking

3.1.A. Application of suffixes to verbal roots with specification of their functions. Although roots can be determined in the early dialects that are suffixed only for tense-aspect, mood, person and number, most verb forms come to have suffixes after the root. In many verbs we can de-

termine no specific meaning for such suffixes, especially those suffixes that consist solely of a consonant. Benveniste by contrast did identify the meanings of the *-dh*-suffix, or in accordance with the term specifically used for such mono-consonantal suffixes, of the *-dh*-determinative (1935:188–210). Whether or not we can still determine their meanings in the dialects, as the corpus of verbs is expanded for each of the dialects, roots adopted derivational suffixes with a class meaning. We may conclude that earlier suffixes also had specific meanings, but that these have become so indistinct that we can scarcely determine them.

Productive suffixes in the dialects on the other hand may display identifiable class meanings. Germanic, for example, has four such classes, if we use Gothic as example. The first class has an *-(é)yeleo-* suffix, the second an *-ō-*, the third an *-ē-*, the fourth a *-nan-*. Class meanings are relatively clear for three of these: for the first, factitive or causative, for the third, intransitive and stative, for the fourth, inchoative (cf. Braune/Ebbinghaus 1981:118–26). Suzuki has linked the *-nan-* suffix with others in Gothic, ascribing to them a detransitiving force. Verbs of the second class are denominatives suggesting activity of the underlying noun, e.g. 'to think, to rule'; for the most part they are intransitive. Noting that these class meanings have reference to governance of the verb, we may propose that as the language shifted from active to accusative structure classes were formed for which characteristic suffixes indicated those meanings.

For the parent language three such suffixes were identified by Brugmann and Delbrück, in keeping with other Indo-Europeanists of the nineteenth century. Following Delbrück's presentation (1897:27–64), we may indicate them with their class meanings. The *-yo-* presents indicate processes, and are generally intransitive. The second or *-n-* presents are terminative, and generally transitive. The *-sko-* presents are also terminative. These characterizations are based on examination of the suffixes in Sanskrit and Greek. Other dialects may show different functions; in Hittite, for example, the *-sk*-suffix has iterative force, in Latin, inchoative force.

The variation in function of even the inherited suffixes indicates that they were appended only at a late stage of the proto-language. Yet from the specification of meanings among dialects we can conclude that on shift from active to accusative structure markers were introduced to indicate the new central grammatical function of verbs, e.g. whether or not they were transitive and what precisely was their grammatical relationship to the nominal elements in the clause. While the devices were comparable, they differed in detail from dialect to dialect, as the *sk*-suffix illustrates.

The shift to accusative structure was even more generally signaled by the increasing association of particles with verbs.

3.1.B Fixing of preverbs to roots. By means of conflation selected particles were affixed to verbs though initially not joined with them. Generally placed before verbs, they are known as preverbs. Vedic and early Greek as well as Hittite exemplify the period in which the preverbs are not yet affixed, as do occasional examples in the dialects attested later. Gothic grammars generally cite forms like *at-uh-gaf* 'and he gave' that permit elements between the preverb and the verbal form. Formally then, the preverb in the parent language was independent, usually placed earlier in the clause than the verb. Its semantic effect centered on restricting the action expressed in the verb while also generally maintaining one of the meanings of the preverb.

The various modifications are pursued by Wackernagel (1928:177–92). In general the prefixed forms are more specific than the simplexes. Often there is a contrast between transitive and intransitive, as in Latin *regō* 'rule, direct' as opposed to *surgō* 'be directed upward, arise', and in *petō* 'request' as opposed to *suppetō* 'be at hand, suffice'. The simplex could also be intransitive, as in Latin *plōrāre* 'cry out, weep'. and the compound transitive *explōrāre* 'seek out'. Approving the explanation of Schulze, Wackernagel accounts for the considerable difference in meaning through the use of *explōrāre* in hunter's language; by 'shouting' the hunter would discover game, in this way using the device of crying out to dislodge it. Through choice of preverbs a verb could be specified for either intransitive or transitive force.

Of primary concern here is the relationship of prefixation to the use of suffixes, in specifying the relationship of the verb in its clause. As transitivity came to be characteristic, as may be expected in a language of accusative structure, devices were introduced to indicate it, either directly, or by producing for a verb with transitive force through appropriate choice of preverb an intransitive verb (Wackernagel 1928:167–92, esp. 180). In this way addition of suffixes as well as fixing of preverbs came to be characteristic of verbs in the late proto-language and the early dialects as they shifted from active to accusative structure.

The verbal system was modified in other ways, as by development of special forms to indicate person in the plural and dual. The possible procedures for amplifying the system have been sketched by Neu (1968:123–60), with special reference to Hittite, as well as by others referred to earlier. While the modifications are in keeping with the structure of accusative languages, they are of secondary concern here and will not be pursued.

4. INTRODUCTION OF THE PASSIVE

As Neu pointed out (1968:5), it is now accepted that the passive was developed only in the individual dialects, although initial devices may be proposed for late Proto-Indo-European. The different means of indicating the passive from dialect to dialect provide adequate support for the view.

We have noted above that the absence of a passive is a characteristic of active languages. This situation is readily understood by noting the function of the passive in the Indo-European languages: it topicalizes the activity rather than the agent. Moreover, as it develops "it permits an activity and its substance (Gegenstand) to be expressed without mention of the originator of the action" (Neu 1968:6, citing Hermodsson). This amplified use permits development of passives like German *es wurde getanzt* 'dancing was going on', as well as the patterns including an agent, such as 'the music was provided by a pianist', where the emphasis is on availability of the music rather than on the musician. Because active languages do not align verbs and nouns by agency but rather by class, a passive of the Indo-European type is not in keeping with their structure.

Analysis of the procedures by which the several dialects developed their passive forms is a responsibility of specialists in the dialect in question. Wackernagel (1926:135–44) is instructive for Greek. He points out among other matters that the formations in *-ēn* are originally active; they are intransitive aorists which by contrast to transitive aorists came to be used as passives. Similarly, middle forms were interpreted as passives because of the emphasis on the state or action expressed by the form. When the OV syntax developed to SVO, reflexive and reciprocal markers were introduced, differentiating clearly the patterns expressing meaning appropriate to the middle from those of the active and passive. Because of formal developments then as well as semantic, the passive category came to be general in the Indo-European dialects.

5. INTRODUCTION OF VERB FORMS FOR THE MEANING 'HAVE'.

For much the same reason, the dialects developed a verb to indicate the meaning 'have'. Active languages, not including arrangements to specify a transitive relationship, lack such a verb, indicating the relationship in different ways. Moreover, they distinguish between alienable and inalienable possession. The distinction may be related to the classification of nouns into animate and inanimate.

A residue of this distinction may be maintained in Latin. Here, especially in its early materials, the dative of possession is frequent (Bennett 1910–14 II:159–65). While the relationship between the devices to indicate possession, the dative on the one hand, the genitive, and special verbs like *habeō* 'have' on the other, is disputed some scholars have concluded that the dative of possession indicates alienable and the genitive inalienable relationship (Bennett II:164; see also Szantyr, with his reference to previous scholarship II:90–91). Since the uses have not been kept distinct, we cannot insist on the distinction at an earlier stage; but it is also clear that if there is no basis in a language to maintain it, the distinction would readily be lost.

What is indisputable is the adaptation of specific verbs or use of selected syntactic patterns to provide the meaning 'have'. Even the origin of the verbs may be disputed, as is that of the Germanic verb, e.g. Gothic *haban*. Phonologically this has been related to Latin *capiō* 'seize, take, accept,' etc., and also to Latin *habeō* (Lehmann 1986:167). In view of the adaptation, we cannot determine the precise source; the new creation in Germanic may represent a conflation of reflexes of the two roots PIE *kap-* and *ghabh-* if reflexes of them were maintained in the dialect. In Greek a totally different root was adapted for the verb *ékhō*. In some dialects the pattern of using an oblique pronominal form for the possessor was maintained, as in Slavic and Indo-Iranian; it is noteworthy that in Slavic the genitive has also been maintained as case of the partitive object. In short, the variety of constructions in the dialects indicates that the parent language lacked a verb for the meaning 'have'. Like the characteristics of the verbal system discussed above, the absence of a verb to express possession provides strong support for the assumption of earlier active structure.

6. THE NOMINAL SYSTEM OF PRE-INDO-EUROPEAN

Interior analysis of the nominal systems of the dialects has determined late development of the case endings, as they are represented in Vedic, especially in the dual and plural (Lehmann 1958, Villar 1974, both with extensive references). As in the verb, number inflection is late. Moreover, we have noted above that Meillet among others proposed an earlier gender system of two categories, animate and inanimate. That system conforms to one expected in an active language.

There is no need to repeat here observations that lead to assumption of the earlier system. In my analysis of 1958 I proposed four endings: *-s*, which in accordance with the noun forms of an active language would be identified as animate ending; *-m*, which would be identified as inanimate; *-h*, a collective ending; *-O*, there labeled extra-syntactic, that is,

used with particles to indicate its function in the clause, or with appropriate intonation as vocative. Such a set might well be found in an active language where the principal syntactic markers are particles and the verbs with which the members of the two nominal sets are aligned.

A further specific characteristic of active languages is absence of a genitive. In handbooks dealing with Indo-European a genitive has been reconstructed on the basis of Indo-Iranian and Greek, with support from Armenian; the earlier form posited for the thematic inflection is *-osyo*. But the ending for Slavic and Baltic is derived from PIE *-ōd*; that for Latin and Celtic from *-ī*. In Germanic it is not possible to posit only one ending, since the genitive singular in Gothic ends in *-is*, that of Old Icelandic among other dialects in *-as*. The variation in even a late inflection like the thematic is remarkable in pointing to long retention of active characteristics in the noun. Hittite provides further evidence, with use of *-m* as genitive marker in the singular or plural in contrast with the traditional view that *-m* provided secure evidence for reconstructing a genitive plural ending in the parent language.

In 1958 I pointed to uses of genitive forms in Hittite to indicate subjects (199–200), accounting for them as reflexes of the earlier pattern in which the ending indicated an individual. Further evidence has been given by Gamkrelidze and Ivanov (1984:271–81), as well as more specific identification of the ending with reference to active structure. Their presentation amplifies and clarifies earlier statements (Lehmann 1958:196); for example, Jespersen had pointed to Algonquian as having a similar gender distinction to that proposed between animate and inanimate for pre-Indo-European. Like characteristics cited above, the position of these gender categories in the early language has been clarified by relating them to a specific language structure identified in typological study.

7. INCLUSIVE AND EXCLUSIVE PRONOUNS.

As a further characteristic, active languages commonly have inclusive and exclusive pronouns. The characteristic is noted here still because historical linguists have posited such pronouns for pre-Indo-European. Prokosch, for example, accounted for the twofold roots of the Germanic pronoun in this way. By his analysis the root in the nominative, *we-* was inclusive, on the grounds that it was also used in some dialects for the second person, e.g. Old Church Slavic *vy*, Latin *vōs* 'you', Sanskrit accusative *vas-*, as well as Gothic *izwis* 'to you' (1939:282–84). That of the oblique forms, *me-* by contrast, was exclusive; it was maintained as first person pronouns for some dialects, e.g. Lithuanian *mês*, Old Church Slavic *my*, Armenian *mek'* 'we', and provides the basis for the oblique

forms in Germanic, with -m- assimilated to -n- before -s, as in Gothic·uns 'to us' (see also Gamkrelidze/Ivanov 1984:291–93).

Once again a hypothesis proposed for a problem in the dialects on the basis of careful analysis by time-honored procedures has come to be substantiated by a conclusion arrived at on totally different grounds. In view of the other residues clarified by assumption of active structure in pre-Indo-European, the hypothesis of a first person plural pronominal system with inclusive and exclusive forms has been strengthened as has the identification of the earlier stage as active in structure.

8. IMPLICATIONS FOR OUR VIEW OF PROTO-INDO-EUROPEAN AND THE EARLY DIALECTS.

Before examining the implications based on analysis of the residual patterns and forms cited above, we may note that some scholars object to any effort to draw conclusions from them. In a severely negative article Zimmer denies the possibility of reconstructing stages of the proto-language earlier than 500 years before our first records. Indicating through his title that ethics favors his point of view, he further "would like to make an appeal to linguists and archaeologists to abstain from using the term IE or 'PIE' for anything older than roughly 2500 BC." (1988:374) Scholars may of course delimit their activities in any way they wish; it is remarkable however to wrap oneself in a moral mantle, especially when in addition one argues "for the probability of a rather rapid genesis of the 'PIE' people. . . , the development of a new common language by way of creolization patterns, and a rapid spread through processes involving the 'snowball system'" (ibid.).

Other scholars are somewhat less anchored to insisting on what they consider factual. One means of distinction among them is their position regarding the laryngeal theory. Szemerényi grudgingly admits one such element (1970:1980; 1985:2). Mayrhofer, by contrast, has accepted a version that posits three (1986). Others as well now state that the assumption of three is the standard position (cf. Beekes 1989:23). Presumably Indo-European studies will now proceed through a similar period for the glottalic theory of rejection by many scholars, then possible openness to the new idea, and finally acceptance by at least some. On various positions regarding it, see Vennemann, ed. 1989.

In his discussion of historical method with reference to 'grouping of languages' Hoenigswald put higher value on conclusions derived from phonological characteristics than on those based on examination of other elements of a language by restricting application of the comparative method to the sound system. Lexical evidence is in his view less use-ful; "morphological and semantic change [he finds] amenable (along with sound change) to internal reconstruction" (1966:1–12).

In view of these positions examination of the several dialects for the retention of active characteristics provides a further means of proposing and supporting dialect relationships. To the present interrelationships between the various Indo-European dialects have been proposed almost exclusively on the basis of lexical criteria. Porzig, for example, allots fewer than twenty pages to phonological criteria, approximately another ten to morphological, and proceeds to determine the alignments he posits in another hundred and twenty (1954).

Conclusions concerning early sub-groups and their evidence for conservative maintenance of active characteristics may be reached on the basis of the data provided above, but they will not be pursued here. Yet we may note that of the four morphological criteria discussed by Porzig three correspond to those of active languages.

Porzig's first morphological characteristic is the use of '-r- endings to indicate the middle' (1954:83–86). While his chief purpose is to determine dialect alignments, he makes two interesting observations: he concludes that the endings were restricted to the present, and that their function was to indicate middle forms. Elsewhere I have proposed that the function of -r was to indicate the affective meaning for which active languages often have a special form (Gamkrelidze Festschrift).

His second characteristic, entitled 'indication of time in the verb', is now viewed differently; yet it is curious that he interpreted the early form of the perfect as not suited to indicate past time; moreover, he assumed that the early verb was inflected for aspect rather than tense (86–88). While not discussed above, this too is a characteristic of active languages.

The third characteristic he has selected concerns differences in case endings, specifically the form of the genitive singular in o-stems and the forms of the dative/instrumental plural (88–91). His treatment of both is traditional; yet he points out that the two genitive forms in Germanic indicates their recent formation in its dialects.

His fourth characteristic receives the most interesting treatment. In examining verbs that indicate durative action (verbs of state) he concludes that 'Latin, Germanic, Baltic and Slavic' developed a new system to indicate relationships between such concepts from one that earlier required differing lexical items (91–92). After their innovation the relationships were indicated by means of different derivational formations. The conclusion that he reaches about the early stage then corresponds to the characteristic of active languages by which lexical rather than grammatical elements distinguish many meanings.

If, instead of maintaining the traditional view of Proto-Indo-

European as a language that was most closely maintained in Indo-Iranian and Greek, we reconstruct it on the basis of residues preserved from dialect to dialect, we may apply Porzig's selected characteristics to refine the conception of dialect relationships as reflecting an earlier active stage. Our grasp of the earlier period is then more extensive than that achieved by the traditional view as well as more accurate. We may then amplify our understanding of relationships among the early dialects, and of the influences on their development. Further, we have additional means to explore possible relationships between pre-Indo-European and other reconstructed languages.

9. SYNTACTIC CHARACTERISTICS OF PRE-INDO-EUROPEAN FOR DETERMINING SUB-GROUPS AND AS EVIDENCE FOR CONTACTS WITH OTHER EARLY LANGUAGES.

Although Indo-Europeanists have relied heavily on phonological and lexical evidence to reconstruct the proto-language and to determine its sub-groupings, evidence from these segments of language has its shortcomings. Whatever one's views of the glottalic theory, the traditional obstruent system with sets of four members, e.g. *t : d: dh: th*, as reconstructed for Proto-Indo-European can no longer be upheld; always supported with little evidence, the voiceless aspirated set, e.g. *th*, was based on faulty reliance on Indic material. More than a hundred years earlier, Indo-Europeanists reached a similar conclusion about a three-member vowel system, e.g. *i : a : u*, also based on Indo-Iranian. In short, phonological evidence has not gone without modification. The widespread discussion of early sub-grouping now under way, as in Viennemann ed. 1989, and references there, illustrates the shifts in views occasioned by the glottalic theory.

Lexical evidence has been similarly problematic, as the discarded reliance on items like German *Lachs* 'salmon' illustrates.

The basic problem with reliance on these two segments of language results from their non-central situation in language. Syntactic evidence is far more integral in determining the structure of a language. Yet it has been viewed with scepticism. That attitude resulted in great part from inadequate understanding of syntactic patterns and from failure to deal appropriately with residues. When treated properly, syntactic and morphological evidence reveals earlier language structure far more definitely than do phonological and lexical data.

An example in point is the heteroclitic declension of Proto-Indo-European. The clinching argument for demonstrating that Hittite was an Indo-European dialect came on discovery of the declension of Hittite *watar*, genitive *wetenas*. Persistence of the heteroclitic pattern is illustrated by the two variants in current Germanic dialects, e.g. New English *water*, Norwegian *vatn*. As further such conservative patterns we may cite the use of different stems in personal pronouns, e.g. *I : me*, vocalic patterns in strong verbs, and the irregular comparatives such as *good : better*. Among syntactic residues of comparable conservativism are positions in the early dialects, such as Latin *mēcum* 'with me', OV comparative constructions, such as Old Icelandic *sólo fegra* 'fairer than the sun', and the great variety of reflexive and reciprocal constructions that were developed independently in the dialects, pointing to long retention of an OV verbal form—the middle—to indicate reflexive and reciprocal relationships in the parent language. On the basis of several centuries of historical study, such patterns are now explained, and demonstrated to be residues characteristic of the structure of the parent language.

The syntactic patterns discussed above must now be examined in the same way for evidence on sub-grouping. Some conclusions are obvious, such as the comparable maintenance of active and middle voice in Indo-Iranian and Greek; these support the recognized areal relationship between the two sub-groups. Others will require interpretation with reference to the earlier active structure. In this way Palmaitis has accounted for the lack of a third plural verb form in Lithuanian. These two features are residues, though distributed quite differently. Examining all such residues and correlating them with the phonological and lexical evidence that was used by Porzig and others for their sub-groups will be a massive problem.

Examination of the syntactic data from the various language families for possible contacts or interrelationships will require similar intensive analysis. As previous studies illustrate, the data have been interpreted variously. In the lexical area Klimov finds parallels between the items for the numbers among Semitic, Kartvelian and Proto-Indo-European. He also assumes, with reference to Bopp and Möller, that the similarity between the items of 'six' and 'seven' is great enough to propose at least mutual areal influences (1985). Others do not agree.

Similarly, Szemerényi has repeatedly proposed that the "collapse in Indo-Iranian of the vowel-triad *a/e/o* in the single vowel *a* was due to Semitic influence" (1985:52). And in the lexical sphere he has maintained his position that Hittite *ara-* and Indic *ari-* had the same meaning 'companion, mate', and that they were borrowings from the Near East; as possible source he lists Ugaritic *a'ry* 'kinsman', which in his view is connected with Ancient Egyptian *i'ry* 'companion' (1985:43). As he says, "this linguistic conclusion has weighty historical consequences" (ibid.) It also has weighty linguistic and philological consequences, in view of the widely maintained interpretation by Thieme of Aryan *arya-* as 'stranger', which Szemerényi rejects (43) and the many well-known further discussions of this lexical item. Further, these two proposals have further im-

plications for the position that Greek and Indo-Iranian, with Armenian, formed one of the early sub-groups of the Indo-European family.

These further examples have been cited in part to support the view that syntactic characteristics must now be reviewed in an effort to determine evidence on interrelationships with other early languages. The efforts to assemble the data and indicate hypotheses in the thirties, as in the Festschrift honoring Hirt's seventieth birthday in 1936, and by Porzig, are still useful, but much in need of revision and amplification. I suggest that inclusion of syntactic data, especially after the identification of pre-Indo-European as an active language, will be of great benefit in the new undertakings.

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